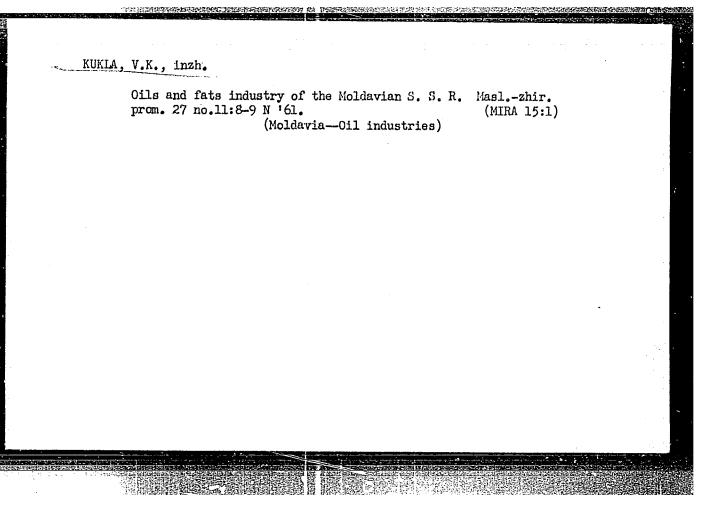
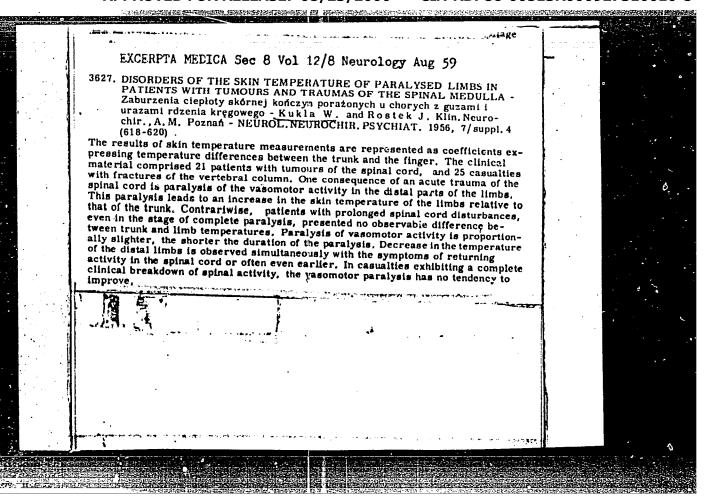
KUKIA. S. ..

The problem of clearing of the improved peat lands. p. 137.

GOSPODARKA WODNA. Warszawa, Poland. Vol. 18, no. 3, 1958.

Monthly List of East European Accessions, (EMAI), LC, Vol. 9, no. 2, Feb. 1960. Uncl.

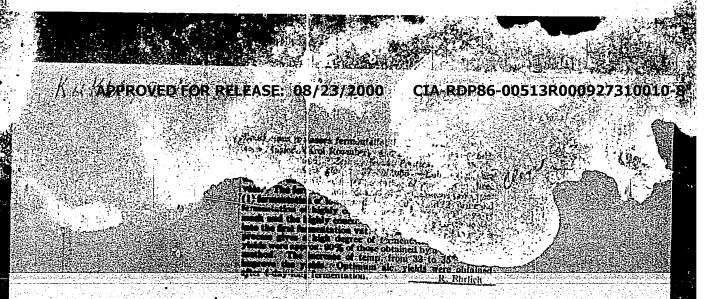




## KUKLA, Wieslaw

Trauma in the Poznan and Zielona Gora region in 1962 and 1963. Zdrow. publiczne 7/8:265-271 Jl-Ag '65.

1. Z Kliniki Neurochirurgicznej AM w Poznaniu (Kierownik: doc. dr. med. H. Powiertowski).



KUKLANOV, I.N., inzh.; KHLISTUN, V.I.; SHCHERBAKOV, M.I.

Analysis of the designs of blastproof inertial mine locomotives with hydraulic drives. Vop. rud. transp. no.6:251-269 '62.

(MIRA 15:8)

1. Toretskiy mashinostroitel'nyy zavod.

(Mine railroads)

76-32-2-19/38 Panchenkov, G. M., Gorshkov, V. I., Kuklanova, H. V. AUTHORS: The Effect of the Addition of Organic Solvents on the Ion TITLE: Exchange Equilibrium (Vliyaniye dobavok organicheskikh rastvoriteley na ravnovesiye ionnogo obmena) I. The Effect of Alcohols on the Equilibrium of Alkaline Ion Exchange on Sulfo-Resins (I. Vliyaniye spirtov na ravnovesiye obmena ionov shchelochnykh metallov na sul'fosmolakh) Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 2, pp. 361-367 PERIODICAL: (USSR) The authors mainly investigated the effect of methylalcohol ABSTRACT: on the equilibrium constant of alkaline ion exchange in the sulfo resins of inland origin CAB-3, CBC and espatite-1. The kind of dependence of the equilibrium constant on the composition of the mixed solvent and its dielectric constant was checked. The effect of alcohol on various sulfo resins in the exchange process was compared for the purpose of explaining the part played by the carbon skeleton in resin. Finally the effect of alcohol on the exchange of various Card 1/3

76-32-2-19/38

The Effect of the Addition of Organic Solvents on the Ion Exchange Equilibrium. I. The Effect of Alcohols on the Equilibrium of Alkaline Ion Exchange on Sulfo-Resins

cations was compared and the part played by the salt-anion in the salts of one and the same metal was explained. - The ion exchange of the alkaline metals Li, Na, and K with the H ion was mainly investigated with chlorides. It is shown that the logarithm of the exchange constant in all investigated ions linearly depends on the quantity 1/D (up to the values of about =0,02) of the solvent. (D denotes the dielectric constant of the solvent). This shows that on these conditions the basic role is played by the change of the electrostatic interaction of ions and not by the change of solvation. It is further shown that an addition of alcohol increases the exchange cors tants of all three cations, that of LiCl changing least and that of KCl most. Within the range of the used concentrations of water-alcohol solutions (up to 60 % CHzOH) a linear dependence of the logarithm of the exchange constant on 1/D was obtained. It is shown that with an increase of the concentration these exchange constants in alcohol become greater which can be used for improving the chromatographic separation of alkaline elements. It is shown that the exchange constants with the NaJ solution

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76-32-2-19/38

The Effect of the Addition of Organic Solvents on the Ion Exchange Equilibrium. I. The Effect of Alcohols on the Equilibrium of Alkaline Ion Exchange on Sulfo-Resins

almost coincide with the corresponding exchange constants with the NaCl solution. This means that in the case of similar salts the nature of the anion has little effect on the magnitude of the exchange constant in water as well as on the change of the constant with alcohol addition. On the other hand, however, if a weakly dissociated ion was formed in congequence of the reaction, this influence is a great one. There are 5 figures, 7 tables, and 10 references, 8 of which are Soviet.

ASSOCIATION:

Gosudarstvennyy universitet im. H. V. Lomonosova (Moscow

State University imeni M. V. Lomonosov)

SUBMITTED:

November 3, 1956

1. Ion exchange resins--Properties 2. Methanol--Exchange reactions

3. Organic solvents--Dielectric properties

Card 3/3

AUTHORS: Panchenkov, G. M., Gorshikov, V. I., 76-32-3-18/43

Kuklanova, M. V.

TITLE: The Influence of Organic Solvents Upon the Ionic Exchange

Equilibrium (Vliyaniye organicheskikh rastvoriteley na

ravnovesiye ionnogo obmena).

II. The Influence of Acetone Upon the Ionic Exchange

Equilibrium of Alkali Metals on Sulfo Resins

(II. Vliyaniye atsetona na ravnovesiye ionnogo obmena

shchelochnykh metallov na sul'fosmolakh)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 3,

pp: 616-619 (USSR)

ABSTRACT: Kressman and Kitchener (ref 1) obtained equilibrium

constants of the ionic exchange of K+ in water-acetone mixtures, but did not explain the obtained results. Bafna (ref 2) does not give any confirmation of his

assumptions either, whereas the investigations by Materova,

Vert and Grinberg (ref 3) did not yield positive results,

perhaps because of knowledge inexact

of the activity coefficients in water-acetone solutions.

Card 1/3 Thus, there exists almost no satisfactory explanation on

The Influence of Organic Solvents Upon the Ionic 76-32-3-18/43 Exchange Equilibrium.

II. The Influence of Acetone Upon the Ionic Exchange Equilibrium of Alkali Metals on Sulfo Resins

the influence of acetone upon the ionic exchange equilibrium. The present paper investigates the ionic exchange equilibrium of the alkali metals Li+, Na+ and K+ on the domestic sulfo resins SBS, espatite-1 and the resin SM-12 (the latter contains sulfo and carboxyl groups), where the H-form of the resins was used and work was done in water-acetone solutions. The method of the taking of isothermal lines was described in an earlier paper. From the experimental results follows that acetone exerts a stronger influence on the equilibrium constant than me thanol. The change of the constant with increasing acctone concentration is similar for all regins. The presence of the weekly dissociated -COOH groups in the resin SM-12 apparently does not play any part. The increase in the ionic exchange by the influence of acetone according to its strength acts like in water i.e. most on K+ and least on Li2. In the investigations of the Li-form of the resin with Na+ ions it was determined that the values for lgK yield a linear

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The Influence of Organic Solvents Upon the Ionic Exchange Equilibrium.

76-32-3-18/43 .

II. The Influence of Acetone Upon the Ionic Exchange Equilibrium of Alkali Metals on Sulfo Resins

> function of 1/D which indicates that no interaction of the ions with the molecules of the solvent takes place, but that the electrostatic ionic interaction is decisive. 2 Me+ - H+ exchange is performed the linear function is not attained, which is explained by the fact that in this case an influence of the H+ ions upon the molecules of the solvent probably takes place. There are 3 figures, 3 tables, and 4 references, 2 of which

> are Soviet

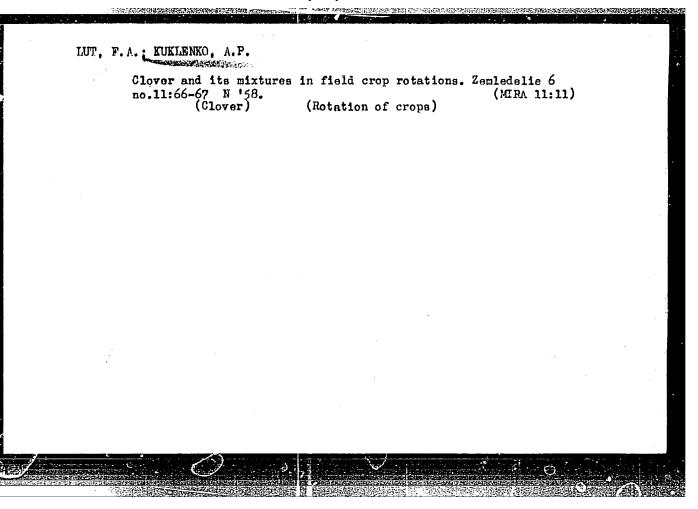
ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova

(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 13, 1956

Card 3/3

CIA-RDP86-00513R000927310010-8" APPROVED FOR RELEASE: 08/23/2000



#### CIA-RDP86-00513R000927310010-8 "APPROVED FOR RELEASE: 08/23/2000

KUKLENKOU, E.P.

112-2-3423

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 2, p. 130 (USSR)

**AUTHOR:** 

Kuklenkov, I. P.

TITLE:

Wye-Delta Switchover Starting Circuit for Electric Motors (Suggested by I. P. Kuklenkov and I. B. Osinskiy) (Skhema puska elektrodvigateley pereklyucheniyem so "zvezdy" na "treugol'nik") ( Predlozheniye I. P. Kuklenkova, I. B. Osinskogo)

PERIODICAL: Sb. rats., predlozh. M-vo Blektrotekhnich. prom-sti SSSR, 1955, Nr 49, pp. 22-23

ABSTRACT:

The operation of a system for switching stator windings from wye to delta utilizing a minimum number of contactors is proposed and described in detail. The system is intended to reduce the starting current of induction squirrel-cage motors. The "linear" and "delta" contactors have two contact groups, and the "wye" contactor has one. The contactors are actuated by three push buttons. The "delta" and "wye push buttons have two contacts each and the "stop" push button has one. Pushing the "wye" button starts the motor and when it has begun

Card 1/2

to turn, the "delta" contactor button is pressed and the motor windings

# "APPROVED FOR RELEASE: 08/23/2000 CIA-R

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112-2-3423

Wye-Delta Switchover Starting Circuit for Electric Motors (cont.)

are switched over to "delta". A great number of installations which have been set up according to this plan are simple and reliable in operation.

A. I. F.

Card 2/2

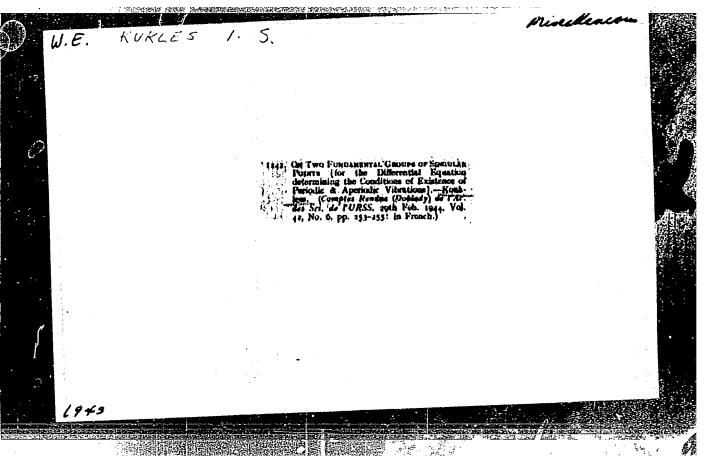
#### KUKLES, I. S.

O tsentrakh i fokusakh. DAN, 19 (1933), 459-461.

O neobkhodimykh i dostatochnykh usloviyakh sushchestvovaniya tsentra. DAN, 42 (1944), 164-167.

O nekotorykh sluchayakh otlichiya fokusa ot tsentra. DAN, 42 (1944), 212-215.

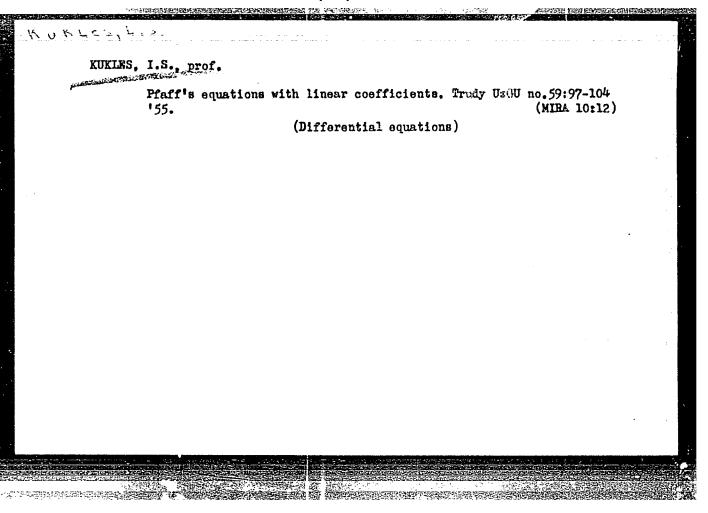
SO: Mathematics in the USSR, 1917-1947
Edited by Kurosh, A. G.
Markusevich, A. I.
Rashevskiy, P. K.
Moscow-Leningrad, 1948



KUKLES, I.S., prof., doktor fiz.-mat. nauk.

Some problems in the methodology of mechanics. Trudy UzGU no.53:
3-53 '55. (MEMA 10:12)

(Mechanics)



AUTHOR:

KUKLES, I.S.

20-3-3/52

TITLE:

On the Frommer Method for the Investigation of a Singular Point (O metode Frommera issledovaniya osoboy tochki)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 117, Nr. 3, pp. 367-370 (USSR)

ABSTRACT: Given the differential equation

$$\frac{dy}{dx} = \frac{Y_n(x,y) + Y(x,y)}{X_n(x,y) + X(x,y)},$$

where  $X_n$  and  $Y_n$  are homogeneous polynomials of n-th degree, while X and Y are analytic functions with terms of higher order. For the investigation of the question how many characteristics go through the coordinate origin with a given tangent, if the equation  $xY_n-yX_n=0$  has real roots, the author uses the method of Frommer [Ref. 1] with the introduction of the order of curvature and the measure of curvature. The author gives seven theorems with sketched proofs and a great number of further single results.

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There is one figure and 2 Soviet and 2 foreign references.

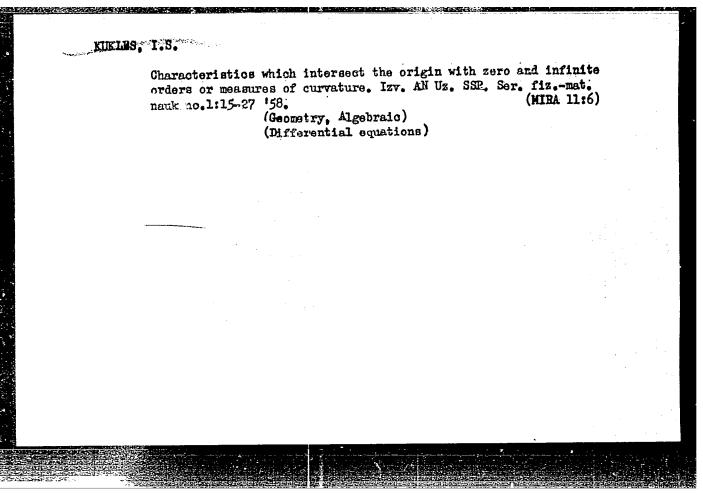
On the Frommer Method for the Investigation of a Singular Point 20-3-3/52

ASSOCIATION: Uzbek State University im. Aliahera Navoi (Uzbekskiy)

gosudarstvennyy universitet im. Alishera Navoi) ENTED: By A.N.Kolmogorov, Academician, 10 April 1957

PRESENTED: By A.N.Kolmogorov, Ac SUBMITTED: 3 January 1957

AVAILABLE: Library of Congress



XUKLES, I.S.; GHUZ, D.M.

Number of operations connected with the use of Frommer method.

Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.1:29-45 '58. (MIRA 11:6)

(Geometry, Algebraic)

(Nifferential equations)

sov/140-58-3-15/34 AUTHOR: \_Kukles, I.S.

On the Behavior of the Characteristics of the Equation of TITLE:

Hukukhara in the Neighborhood of the Origin (O povedenii kharakteristik uravneniya Gukukhary v okrestnosti nachala)

Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, PERIODICAL: Nr 3, pp 111 - 122 (USSR)

Hukukhara [Ref 1] showed that in many cases the behavior of

ABSTRACT: the characteristics of

 $\frac{dy}{dx} = \frac{Y(x,y)}{X(x,y)}$  results from the behavior

of the characteristics of

(1) 
$$x \frac{dy}{dx} = Ay^{k} + B(x) .$$
Let now be 
$$B_{1}(x) = B(x) \left[A(k-1)\right] \frac{1}{k-1}$$

$$\ln^{(n)} x = \left| \underbrace{\ln \ln \dots \ln x}_{n \text{ times}} \right|$$

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On the Behavior of the Characteristics of the Equation SOV/140-58-3-15-34 of Hukukhara in the Neighborhood of the Origin

$$\varphi_{n}(x) = \frac{1}{2} B_{1}(x) x^{\frac{1}{k-1}} (-\ln x)^{\frac{k}{k-1}} \left[ \ln^{(2)} x \ln^{(3)} x \dots \ln^{(n)} x \right]^{2} - \frac{1}{4} \left\{ \frac{2}{k} \left[ \ln^{(2)} x \ln^{(3)} x \dots \ln^{(n)} x \right]^{2} + \left[ \ln^{(3)} x \ln^{(4)} x \dots \ln^{(n)} x \right]^{2} + \left[ \ln^{(4)} x \dots \ln^{(n)} x \right]^{2} + \dots + \left[ \ln^{(n-1)} x \ln^{(n)} x \right]^{2} + \left[ \ln^{(n)} x \right]^{2} + 1 \right\}$$

Theorem: If for sufficiently small x>0 one of the functions  $\psi_n(x)$  is  $\leq 0$ , then (1) possesses characteristics which run into the origin in the first quadrant. If there exists a  $\psi_n(x)$  which for arbitrarily small positive x is larger than an arbitrary positive number h, then such characteristics do not exist in the first quadrant. There are 3 references, 1 of which is Soviet, 1 Japanese, and 1 Italian.

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet imeni A. Navoi (Uzbek State University imeni A. Navoi)

Card 2/3

On the Behavior of the Characteristics of the Equation SOV/140-58-3-15/34 of Hukukhara in the Neighborhood of the Origin

SUBMITTED: January 20, 1958

Card 3/3

### KUKLES, I.S.

Differentiation problems for Frommer's normal domains. Izv. AN Uz.SSR.Ser.fiz.-mat.nauk no.5:69-78 '58. (MIRA 11:12)

1. Institut matematiki i mekhaniki im. V.I.Romanovskogo AN UzSSR. (Differential equations)

Behavior of the characteristics of Gukuhara's equations in the vicinity of the beginning. Dokl. AN Uz.SSR no.7:5-10 '58.

(MIRA 11:10)

1. Institut matematiki i mekhaniki imeni V.I. Romanovskogo AN UzSSR. Predstavleno akademikom AN UzSSR T.A. Sarymsakovyn.

(Differential equations)

KUKLES, I.S., GRUZ, D.M.

One analogy of the Hukuhara equation. Trudy UzGU no.78:43-52 58. (MIRA 13:6)

16(1)

AUTHOR: Kukles, I.S. SOV/166-59-1-11/11

TITLE:

On the Distinguishing Problems of Frommer (K, problemam

razlicheniya Frommera)

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fizikomatematicheskikh nauk, 1959, Nr 1, pp 91-104 (USSP)

ABSTRACT:

Given the equation
$$\frac{dy}{dx} = \frac{Y_n(x,y) + Y(x,y)}{X_n(x,y) + X(x,y)},$$

where Xn, Yn are homogeneous polynomials of n-th degree, while X, Y in the neighborhood of the origin are continuous, satisfy the Lipschitz conditions and  $\lim_{r\to c} \frac{x}{r^n} = \lim_{r\to c} \frac{y}{r^n} = 0$ ,  $r = \sqrt{x^2 + y^2}$ 

In polar coordinates (1) changes into  $r \frac{d \cdot f}{dr} = \frac{F(\cdot \psi) + f(r, \psi)}{G(\cdot \psi) + g(r, \psi)}$ .

Theorem: If  $\lim_{x \to \infty} f(x, \varphi) \left[ -\ln x \right]^{k-1} = 0$  for  $\varphi = u \left[ -\ln x \right]^{-k-1}$ 

and every fixed u, then the characteristic of (1) is unique in

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On the Distinguishing Problems of Frommer

SOV/166-59-1-11/11

the first and second problem of Frommer.

Two further similar theorems for other special cases and seven examples are given. The author mentions N.B.Khaimov, V.E. Vinograd, and D.M.Grobman.

There are 8 figures and 9 references, 6 of which are Soviet,

1 Swedish, 1 American, and 1 Italian.
ASSOCIATION: Institut matematiki i mekhaniki AN Uz SSR (Institute of

 $(x_1, \dots, x_n) = (x_1, \dots, x_n) \in \mathbb{N}^n$ 

Mathematics and Mechanics, AS Uz SSR)

English Commence

SUBMITTED: April 30, 1958

Card 2/2

16(1) AUTHOR:

Kukles, I.S.

sov/140-59-2-10/30

TITLES

On the First and Second Distinction Problem of Frommer (O pervoy

i vtoroy problemakh razlicheniya Frommera)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959,

Nr 2, pp 101-117 (USSR)

ABSTRACT:

Given the equation

(1) 
$$x \frac{dy}{dx} = \frac{1}{k-1} y^k P(y) + f(x_0 y),$$

where k is even, P(0) = 1, P(y) is analytic or satisfies the Lipschitz condition, f(x,y) satisfies the Lipschitz condition in

y and tends to zero with x. Theorem: If there exists a  $u_0 > 0$  so that for all  $|u| > u_0$  it holds

$$u^{-k}r(x,u) = \frac{1}{k+1}(1-u^{1-k}) + \omega(x,u)u^{1-k} > h$$
,  $h > 0$ 

and besides for all  $u(-\infty < u < \infty)$  r(x,y) > h, then there exists no characteristic of (1) ending in the origin. But if  $r(x,u) \le 0$ in an arbitrarily small interval  $(-\varepsilon, +\varepsilon)$  or  $r(x,u) \ge 0$  in  $(-\varepsilon, \varepsilon)$ , while for at least one value outside of the interval r(x,u) < 0, then there exist infinitely many characteristics ending in the

Card 1/3

On the First and Second Distinction Problem of Frommer SOV/140-59-2-10/30 origin. Here  $\omega(x,u) = f(x,y)(-\ln x)^{\frac{k-1}{k-1}}$ . Given  $(2) \quad x \frac{dy}{dx} = -\frac{1}{k-1} y^k P(y) + f(x,y)$  and let  $\lim_{x\to 0} f(x,0)(-\ln x)^{\frac{k}{k-1}} = 0$ , k odd. Theorem: If for all  $|u| > u_0$ :  $u^{1-k}q(x,u) = \frac{1}{k-1}(1+u^{1-k}) - \alpha(x,u)u^{1-k} > h > 0$ , where  $\alpha(x,u) = \frac{\omega(x,u) - \omega(x,0)}{u}$  and besides q(x,u) > h > 0 for all u, then only one characteristic ends in the origin. But if q(x,u) < 0 for  $(-\epsilon,\epsilon)$ , then there exist infinitely many

characteristics ending in the origin. Theorem 3 and 4 consider the case where  $f(x,0) \cdot (-\ln x)^{\frac{k}{k-1}}$  has a

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On the First and Second Distinction Problem of Frommer SOV/140-59-2-10/30
finite limit value \$\neq 0\$ and a special case.
The author mentions N.B.Knaimov, V.E.Vinograd, D.M.Grobman, and
A.F.Andreyev.
There are 6 figures and 13 references, 8 of which are Seviet,
2 German, 1 Japanese, 7 American, and 1 Ivolica.

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi
(Uzbek \$\frac{1}{2}\$ State University imeni Alisher Navoi)

SUBMITTED: October 14, 1958

67130 SOV/166-59-6-3/11

16(1)- 16,3400

TITLE:

On a Special Case of the First Classification Problem

PERIODICAL:

Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-mate-

maticheskikh nauk, 1959, Nr 6, pp 14 - 26 (USSR)

ABSTRACT:

Let the equation (1) 
$$x \frac{dy_1}{dx} = Ay_1^k + y_1 \cdot p(x) + B(x)$$

be considered, where  $\varphi(x)$ , B(x) is continuous,  $\varphi(0)=B(0)=0$ .

By the transformation  $y_1 = y \left[A(k-1)\right]^{-1/k-1}$ 

(2) 
$$x \frac{dy}{dx} = -\frac{1}{k-1} y^k + y y(x) + \lambda^k(x)$$
 with  $\lambda^k(x) =$ 

= 
$$B(x) \left[A(k-1)\right]^{1/k-1}$$
 Let denote

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APPROVED FOR RELEASE: 08/23/2000

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67130 SOV/166-59-6-3/11

On a Special Case of the First Classification

Problem

(3)  $\Psi_n(x) = -\Psi(x) \ln x \ln^{(2)} x \dots \ln^{(n)} x - \frac{1}{k-1} \left[ 1 + \ln^{(n)} x + \frac{1}{k-1} \right]$ 

 $+ \ln^{(n)} x \ln^{(n-1)} x + \dots + \ln^{(n)} x \ln^{(n-1)} x \dots \ln^{(2)} x$ 

(4)  $\lambda_n(x) = \lambda(x) \left[ -\ln x \ln^{(2)} x \dots \ln^{(n)} x \right]^{1/k-1}$ 

where  $\ln^{(2)} x = \ln |\ln x|$ , ...,  $\ln^{(n)} x = \ln |\ln^{(n-1)} x|$ .

The author investigates the behavior of the integral curves of (1) in the right half plane. If there exists only one characteristic running into the origin, then it is spoken of situation a, if there are infinitely many, then it is spoken of situation b.

Theorem 1: If there exists a number n (n = 1, 2, ...) for which

it is  $\lim_{x \to +0} \lambda_n(x) = 0 ,$ 

Card 2/4

67130 SOV/166-59-6-3/11

On a Special Case of the First Classification Problem

while  $\psi_n(x)<-h<0$  is for small positive x, then the situation a takes place. If, however, (5) is satisfied and  $\psi_n(x)>h>0$ , then one has situation b . Theorem 2: If there exist positive numbers  $x_0$  and h so that

(7) 
$$\psi(x) = \frac{(k-1)\psi(x) \ln x+1}{k \lambda^{k-1}(x) \ln x} < 1 - h$$

holds in  $0 \le x \le x_0$ , then one has situation a , if, however, in the same interval it is

(7') 
$$\psi(x) > 1 + h$$
,

then the characteristics have situation b. It is assumed that, when the denominator of (7) tends to zero, then the numerator does not tend to zero.

Then it is shown that under certain assumptions the first

Card 3/4

On a Special Case of the First Classification 67130 Problem . SOV/166-59-6-3/11

THE PROPERTY OF THE PROPERTY O

classification problem can change over into the second one. Numerous examples are considered.

There are 4 figures, and 5 references, 4 of which are Soviet,

ASSOCIATION: Institut matematiki imeni V,I.Romanovskogo Ali Uz SSR

(Mathematical Institute imeni V.I. Romanovskiy AS Uz SSR)

SUBMITTED: January 22, 1959

Card 4/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

16(1)

AUTHOR:

Kukles, I.S.

SOV/20-128-2-5/59

TITLE:

Three Discrimination Problems

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 239-242 (USSR)

ABSTRACT: !

The author considers the equation

(3) 
$$r \frac{d\varphi}{dr} = \frac{F(\varphi)+f(r, \varphi)}{G(\varphi)+g(r, \varphi)}$$
,

where F and G are homogeneous polynomials of n-th degree in  $\cos\varphi$ ,  $\sin\varphi$ , while f and g are continuous functions satisfying the Lipschitz condition in  $\varphi$ , where  $f(0, \varphi) = g(0, \varphi) = 0$ . Let

$$F(\varphi_0) = 0$$
,  $G(\varphi_0) \neq 0$  and  $F(\varphi)/G(\varphi) = A(\varphi - \varphi_0)^k + a_1(\varphi - \varphi_0)^{k+1} + ...$ 

There exist three discrimination problems: 1) A<0, k odd: in the direction  $\varphi_0$  in the origin there ends one characteristic

(situation a) or infinitely many (situation b); 2) A  $\neq$  0, k even: in the direction  $\varphi$  in the origin there end infinitely many characteristics (situation a) or none (situation b); 3)  $F\equiv 0$ , the origin is a singular knot (situation a) or an arbitrary other singular point (situation b).

Card 1/3

Three Discrimination Problems

SOV/20-128-2-5/59

The author considers separately all three problems and obtains generalizations of the well-known results for all three cases. case 2 it is put  $\varphi - \varphi_0 = y$ , r = x, then from (3)

one obtains the equation

(4) 
$$x \frac{\partial y}{\partial x} = Ay^k P(y) + f_1(x,y)$$
 and furthermore by the substitution

(7) 
$$y = y_1 \left[A(k-1)\right]^{1/k-1}$$

one obtains the equation

(8) 
$$x \frac{dy_1}{dx} = y_1^k P_1(y_1)/k-1 + f_2(x,y_1),$$

where  $P_1(0) = 1$ .

Theorem 1: Let  $r(x,u) = \frac{u^k - u}{k-1} + f_2[x,u(-\ln x)^{1/1-k}](-\ln x)^{k/k-1}$ . If there exist positive numbers  $u_0$ , h, so that for all  $|u| > u_0$ it holds  $u^{-k}r(x,u) > h$  while for all other u it holds r(x,u) > h,

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APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927310010-8"

Three Discrimination Problems

SUV/20-128-2-5/59

then the characteristics of (8) have the situation b. But if there exist the values  $u_1$ ,  $u_2$ , so that  $r(x,u_1) > h$  and  $r(x,u_2) < -h$ , while  $r(x,0) \le 0$ , then the characteristics have the situation a.

Further three theorems relate to the first problem and one theorem relates to the third problem.

The author mentions Frommer, N.B. Khaimov, V.E. Vinograd, D.M. Grobmen, and A.F. Andreyev.

There are 14 references, 10 of which are Soviet, 1 German, 1 Japanese, 1 Argentinian, and 1 American.

ASSOCIATION: Institut matematiki i mekhaniki imeni V.I. Romanovskogo Akademii nauk Uz SSR (Institute of Mathematics and Mechanics imeni V.I. Romanovskiy, AS Uz SSR)

PRESENTED: April 27, 1959, by I.G.Petrovskiy, Academician

SUBMITTED: April 23, 1959

Card 3/3

Ku	KLE	Mathematical Associations and Machiner is mentalized v Unbellature (Reserve in Mathematical Associations and Machiner in Section 1. Tablator (14-70 AS Unbelstor) SSR, 1350, 259 p. Strata ally inserted, 1,000 copies printed, 1900s oring Agency: Abademyn neut Utbelstory SSR. Institut astomatiki i sectantiki ismil V.I. Romanorakogo.  Marsh Mill I.S. Arrhanyth, Corresponding Nember, Academy of Sciences UnSSR, Ed.:	FUNCTS: This collection of articles is forced for sathematicies, sectorics, a spirate, a satisfact shing afterneed courses in divisions of pivates and sathematics at universities and pedapogical schools of higher education.	Configuration the absolute containing in surfaces during with the smalles of interesting pations on the theory of integrating differential equations is submanated paying and seminated of the body of the makers, and the problem of the base approximation of functions. Individual series is shallowed the broken of the bose approximation of the semination of the seminated of the sem	6. Dobystand, 79-M., and U.P., Sadoor. On the Unitedy Flow of a Viscous Loopinssible Liquid Close to a Notating Disk	7. Isomy, A.I. On the Asymptotic behavior of Solutions of Integro- Inferential Roution operate of the Volterre Type	o	ns of Sequence of Pe Equations With a Small	Edulor, V.E. Volterre-Type Integral Equations for framewers.	1). Logiany, P.J. The Chaptygia Nethod is the Proof of the Extension 133. Theorem.		ŧ	Linear Parabolic Equation	Continue of the continue of th		
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KUKLES, 1.5.; SUYARSHAYEV, A.M.

Generalized method of Frommer. Izv. vys. ucheb. zav.; mat. no. 3:173-187 '60. (MIRA 13:12)

1. Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi i Institut matematiki ineni Romanovskogo AN UzSSR. (Differential equations)

S/166/60/000/004/001/008 C111/C222

Kukles, I.S., Corresponding Member of the Academy of Sciences AUTHORS: Uz.SSR, and Suyarshayev, A.M.

Generalization of the Method of Frommer for Equations With TITLE: Semianalytic Right Sides

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR. Seriya fizikomatematicheskikh nauk, 1960, No.4, pp.11-24.

The paper joins the earlier investigations of Kukles (Ref. 2, 3.4) on the problem of Frommer. The authors consider an equation in normal form (compare (Ref.4))

(5) 
$$\psi(x) \frac{dy}{dx} = a_0 y^n + \varphi_1(x) y^{n_1} + \varphi_2(x) y^{n_2} + \cdots + \varphi_2(x) y + \varphi_3(x) + \Re(x, u),$$
where

 $n > n_1 > n_2 > \dots > n_8 = 0$ (4)

(4')  $\lim_{x\to +0} \frac{\varphi_i(x)}{\varphi_{i-1}(x)} = 0, \qquad i=1,2,\dots,s$  and the remainder R(x,y) consists of terms  $\alpha_k(x)y^{n-k}$ , where to every k Card 1/2

CIA-RDP86-00513R000927310010-8" **APPROVED FOR RELEASE: 08/23/2000** 

\$/166/60/000/004/001/008 C111/C222

Generalization of the Method of Frommer for Equations With Semianalytic Right Sides

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there exists at least one i so that

$$(4") \qquad \frac{\alpha_{k}(x)y^{n-k}}{\Psi_{i}(x)y^{n}i} \longrightarrow 0$$

with x and y \_>0. The authors investigate the question whether for x >0 there exist trajectories which end in (0,0) and if there exist such trajectories, whether their set is finite or infinite. By introducing of so-called characteristic functions which are small of different order, the problem of Frommer is generalized to the considered case. Three lemmas on the orders of the introduced characteristic functions are proved. No final result with respect to the initial problem is given.

There are 4 Soviet references.

[Abstracter's note: The comprehension of the paper is very difficult by very confused and incompletely explained notations and by probable misprints or mistakes owing to inadvertence].

ASSOCIATION: Institut matematiki im. V.I.Romanovskogo AN Ut SSR (Institute of Mathematics im. V.I.Romanovskiy AS Uz SSR)

SUBMITTED: January 14, 1960 Card 2/2

16.3500

S/044/61/000/005/007/025 C111/C444

AUTHOR 8

Kukles, I. S.

TITLE:

On some problems of nonlinear oscillations

PERIODICAL:

Referativnyy zhurnal, Matemalika, no. 5, 1961, 26, abstract 5B134. (Vses. Mezhoùz. Konferentsiya po teorii i metodam rascheta nelineyn. elektr. tsepey, no. 7, Tash-kent, 1960, 13 - 24)

TEXT: A survey, representing the main results of I. S. Kukles and his disciples: N. B. Khaimov, P. L. Khaimova, D. M. Gruz, A. Suyartayev, N. Abdulayev, on some questions of the theory of nonlimity near oscillations; e. g. methods for establishing the behaviour of the integral curves of the system

$$\frac{dx}{dt} = X(x,y), \quad \frac{dy}{dt} = Y(x,y)$$

if the right hands are non-analytic functions of the kind

$$\alpha y^{n} + \alpha_{1}(x)y^{n-1} + \alpha_{2}(x)y^{n-2} + \cdots + \alpha_{n}(x)$$

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One some problems of nonlinear...

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where  $\infty_{\underline{q}}$  are continuous functions. There are also given results on the isochronous problem, obtained by the author together with S. P. Abdulayev.

(Abstracter's note: Complete translation.)

Card 2/2

RUKIES, I.S.

"On two problems of nonlinear oscillations theory."

report submitted for the Intl. Symposium on Nonlinear Vibrations, IUPAM, Kiev Sept 12-18, 1961.

Uzbek State Univ. Samarkend USSR

5/020/61/136/001/004/037 C111/C222

CIA-RDP86-00513R000927310010-8"

16.3400

AUTHORS: Kukles, I.S., and Suyarshayev, A.M.

TITLE: Frommer's Generalized Method

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1,pp.29-32

TEXT: The authors consider

(1) 
$$\frac{dy}{dx} = \frac{\alpha_0 y^m + \alpha_1(x) y^{m-1} + \alpha_2(x) y^{m-2} + \dots + \alpha_m(x)}{\beta_0 y^n + \beta_1(x) y^{n-1} + \beta_2(x) y^{n-2} + \dots + \beta_n(x)}$$

**APPROVED FOR RELEASE: 08/23/2000** 

where  $\alpha_0$ ,  $\beta_0$  are constants,  $\alpha_0^2 + \beta_0^2 \neq 0$ ;  $\alpha_1(x)$ ,  $\beta_1(x)$  differentiable for small x > 0 and of a constant sign,  $\alpha_1(0) = \beta_1(0) = 0$ ,  $i = \overline{1,m}$  and  $i = \overline{1,n}$ , respectively. If all  $\alpha_i(x) = 0$ ,  $i = \overline{1,m}$  then let at least one  $\beta_{j}(x) \neq 0$ .

Putting  $y = u\omega(x)$ , where  $\omega(x)$  is differentiable for small x>0 then

(2) 
$$\frac{du}{dx} = \frac{P(x,u)}{Q(x,u)}$$



Frommer's Generalized Method

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where

(3) 
$$P(x,u) = u^m \omega^{m-1} (\alpha_0 - \beta_0 \frac{\omega'}{\omega}) + u^{m-1} \omega^{m-2} (\alpha_1 - \alpha_1 \frac{\omega'}{\omega}) + \dots$$

... + u(
$$\alpha_{m-}$$
 -  $\beta_{m-1}$   $\frac{\omega'}{\omega}$ ) +  $\frac{\alpha_m}{\omega}$ 

and

(3') 
$$Q(x,u) = \beta_0 u^{m-1} \omega^{m-1} + \beta_1(x) u^{m-2} \omega^{m-2} + \beta_2 u^{m-3} \omega^{m-3} + \dots + \beta_{m-1}(x)$$

Here m = n + 1, that gives no loss of generality.

Let y(x), x>0, be continuous. If  $\lim_{\omega \in X} \frac{y(x)}{\omega(x)} = A$ , where  $0<|A|<\infty$  then it is said that y(x) has the same order of smallness than  $\omega(x)$  and has the measure of smallness A.

$$\omega_{ij} = \left(\frac{\alpha_{j}}{\alpha_{i}}\right)^{\frac{1}{j-1}}, \quad \omega_{i'j'} = \left(\frac{\beta_{i}}{\beta_{i}}\right)^{\frac{1}{j-1}}, \quad \omega_{ij'} = \omega_{j'i} = 0$$

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Frommer's Generalized Method

s/020/61/136/001/004/037 C111/C222

$$= \left[ \left( j - 1 \right) \int_{x_0}^{x} \left| \frac{\alpha_j}{\beta_j} \right| dx \right]^{\frac{1}{1-j}}, \quad \omega_{ii} = \exp \left[ \int_{x_0}^{x} \left| \frac{\alpha_j}{\beta_i} \right| dx \right]$$

Let  $\gamma_j = \alpha_j \omega^{m-j-1}$  (or  $\gamma_j = \beta_j \omega^{m-j-2} \omega$ ) lie at the right side of  $\gamma_i = \alpha_i \omega^{m-i-1}$  (or  $\gamma_i = \beta_i \omega^{m-i-2} \omega$ ) if j > i; let  $\gamma_i$ , lie at the right side of  $\gamma_i$ . Furthermore: let  $\omega_i$  lie at the right side of  $\omega_i$  if k > j; let  $\omega_{ik}$ ; lie at the right side of  $\omega_{ik}$  etc. Let  $\gamma_i$  (or  $\gamma_i$ ) be the utmost left element  $\gamma \neq 0$ . Considering the functions  $\omega_{ii}$ ,  $\omega_{i,i+1}$ ,  $\omega_{i,(i+1)}$ , ....,  $\omega_{im}$  (or  $\omega_{i',i+1}$ ,  $\omega_{i',(i+1)}$ ,  $\omega$ 

Frommer's Generalized Method

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 $\omega_{jj}$ , ,  $\omega_{j,j+1}$  ,  $\omega_{j,(j+1)}$ , ...,  $\omega_{jm}$  are considered. That one of

them which has the least order of smallness is called the second characteristic function etc. The functions  $\omega_{kl}$ ,  $\omega_{kl}$ , and  $\omega_{k'l}$ , are called ordinary, the function  $\omega_{kk'}$  is called singular.

The total number of characteristic functions is  $\leq m$ . The order of smallness of the i-th characteristic function is greater than that of the (i-1)-st.

Theorem 1: Every solution y(x) of (1) defined in the right halfplane and vanishing in the origin, has the order of smallness of a characteristic function.

If the characteristic function  $\omega$  is ordinary then (2) has the form

(4) 
$$\frac{du}{dx} = \frac{N(u) + \mathcal{E}(x, u)}{k(u)[N_1(u) + \mathcal{E}_1(x, u)]},$$

where N(u), N<sub>1</sub>(u) are polynomials;  $\mathfrak{E}(x,u)$ ,  $\mathfrak{E}_1(x,u)$ , k(x) are continuous functions vanishing with x, and  $\mathfrak{E}(x,u)$  =  $\mathfrak{E}(x,u)$ 

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Frommer's Generalized Method

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Theorem 2: If the order of smallness of the solution y(x) of (1) is identical with the order of an ordinary characteristic function  $\overline{\omega}$  then the measure of smallness of this solution equals one of the real roots of the equation N(u)=0 which are different from zero. If  $\overline{\omega}$  is a singular characteristic function then (2) has the form

(4') 
$$\frac{du}{dx} = \frac{N_2(u) + \varepsilon(x,u)}{\lambda(u) \left[N_1(u) + \varepsilon_1(x,u)\right]},$$

where N<sub>2</sub>, N<sub>1</sub> are polynomials,  $\mathcal{E}(x,u)$ ,  $\mathcal{E}_1(x,u)$  are continuous functions vanishing with x;  $\lambda(x)$  is continuous for small x>0 but for x=0 it may have a jump. Theorem 3: If  $\overline{\omega}_{kk'}$  is a singular characteristic function then three cases are possible: 1)  $\alpha_k(x)$  and  $\beta_k(x)$  have different signs; 2)  $\alpha_k(x)$  and  $\alpha_k(x)$  have equal signs, where (5)

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Frommer's Generalized Method

diverges; 3)  $\alpha_k(x)$  and  $\beta_k(x)$  have equal signs where (5) converges. In the case 1) (1) has no solutions with the order of smallness of  $\overline{\omega}_{kk}$ , in the right halfplane. In the case 2) there exist such solutions only then if their measures of smallness are equal to the real roots of  $N_2(u)=0$  which are different from zero. In the case 3) there exist infinitely many solutions with the order of smallness of  $\omega_{kk}$ , and every solution has its

own measure of smallness (singular case).

There are 4 references: 3 Soviet and 1 German.

There are 4 references: 3 Soviet and 1 German.

[Abstracter's note: There are several misprints in the formulas]

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi (Uzbekskaya State University imeni Alisher Navoi)

PRESENTED: July 8, 1960, by I.G. Petrovskiy, Academician

SUBMITTED: June 21, 1960

Card 6/6

EURLES, T.S. (Samarkend); BUROV,T. (Samarkend)

Distinction between a center and a focus. Tzv. vys. ucheb. zav.;
mnt. no.6:98-108 \*63 (MIRA 17:8)

## "APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000927310010-8

L 537L3-65 EMT(d) Pg-4 LiP(c)

ACCESSION NR: AP5017236

UB/0140/64/000/006/0088/0097

AUTHOR: Kukles, I. S. (Samarkand); Khasanova, M. (Samarkand)

15

TITLE: Distribution of singular points of a first and second group

SOURCE: IVUZ. Matematika. no. 6, 1964, 88-97

TOPIC TYPE: differential equation, distribution theory

Abstract. This paper is a study of the distribution of the singular points of the utilizential equation

$$\frac{dy}{dx} = \frac{q_1x + q_2y + q_1x^2 + q_1xy + q_2y^2}{\rho_1x - \rho_1y + \rho_1x^2 + \rho_1xy + \rho_2y^2} \tag{1}$$

(p<sub>i</sub> and q<sub>i</sub> are constant confficients) in the finite protion of the plane. This problem has been studied by various mathematicians. The early, partly erroneous results of W. BUCHEL (1904) and M. FROMMER (1934) were corrected by the Soviet mathematicians N. A. SAKHARNIKOV, N. A. LUKASHEV, A. N. BERLINSKIY, Kh. R. LATIPOV, and I. I. SHIROV, S. P. LATINOV, in particular, demonstrated the possibility of the coexistence of a menter and focus for Equation (1) and studied the behavior of the curves of this equation on Foincare's sphere for

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the case in which the origin is at the center. A. N. BERLINSKIY has developed several general theorems concerning the singular points of Equation (i); his lasic approach has been to introduce an affine transformation, which results in the numerator and denominator of the right-hand member of (1) being reactived into a product of linear factors. On this basis, and with the help of Poincare's theory of indices, he demonstrated that if a quadrangle constructed on the guest puints is convex, then two opposite singular points will be raddle points in other two will be "antisaddle points" thoses construct for amount the quadrangle is concave, then either an internal point will be a e point and there will be three external antisaddie points, or til external points will be saddle points, and the internal point, an antisaddle point. In Assolutes are anowed that the number of singular points of the second group denters or foci) does not exceed two. an all pov's proof of this theorem, intended to replace Berlinskiy's as as sery complex one, is nonrigorous and also inapplicable to the general sation (i). This paper includes the authors proof of the treorem and demonstrator in the right-hand member of (1), points 0(0, 0),  $A'(x_1, y_1)$ ,  $^{-1}$  x..  $^{-1}$  , and  $M'(x_3, y_3)$  are four singular points of equation (1).

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With the substitution

$$\frac{1}{x} = \frac{1}{D_0} (x_1 y - x y_1), \quad \frac{1}{y} = \frac{1}{D_0} (y_2 x - y x_2), \quad (2)$$

equatio. (1) becomes

$$\frac{dy}{dx} = \frac{ex(x-1) + fy(y-) + cxy}{a_1x(x-1) + y(y-1) + c_1xy}.$$

for which it is shown that point O remains at the origin, point A' is shifted to point A(1, 0), and point B' is shifted to point B90, 1). with a root equation (2) becomes

$$\frac{dy^* = \frac{x^2 - x + b(y^2 - y) + exy}{(x^2 - x) + b, (y^2 - y) + c_1 xy}.$$

The discriminant of the secular equation is  $\Gamma_0 = (b - a_1)^2 + 4$ . If  $D \ne 0$ , the secular belongs to the first group of singular points; and  $\Gamma_0 \le 1$ , to the

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ACCESSION HR: AP5017236

second (that is, it becomes a center of a focus). With  $D_0=0$ , the origin will be a degenerate node, provided the characteristic determinant  $\triangle_0 \neq \emptyset$ . For so point A(1,0) the discriminant of the secular equation has the form  $D_{\lambda} \neq \emptyset$ .

$$(c_1-a_1-b)^2 -4(c_1-b_1)$$
, while for B it is  $D_B = (c_1-a_1-b)^2 -4b_1 (c-1)$ .

With the aubstitutions c-sp-b = up, cp-sp-b = v and sp +b = k, the discrim-

inent becomes  $D_A = u^2 + 4(v + k - b_1)$ ,  $D_B = v^2 + 4b_1 (u + k - 1)$ . Setting

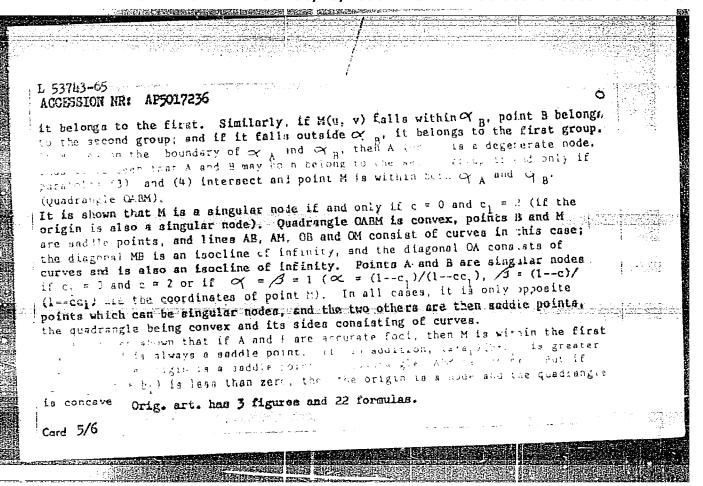
DA = DB, the authors obtain the parabolas

$$u^2 = -it(v + k - b_1),$$
 (3)

$$v^2 = -dtb_1(u + k - 1) \tag{4}$$

Let  $\propto_A$  be the region bounded by parabola (3) and the straight line v = c, and  $\propto_B$  be that bounded by parabola (4) and u = c. If point M(u, v) falls within  $\propto_A$ , then A belongs to the second group; and if it falls outside  $\propto_A$ .

Card 4/6

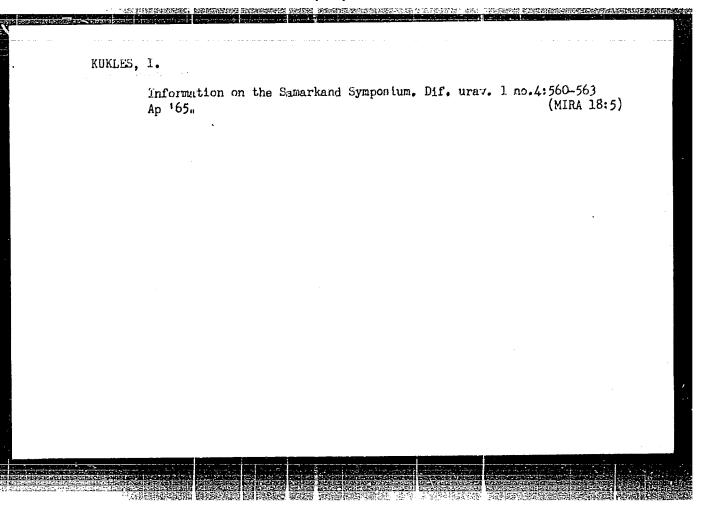


L 53743-65 ACCESSION NR: AP5017236	
ASSOCIATION: none	
SUBMITTED: 08Jun64 ENCL: CO SUB CODE NO REF SOV: 010 OTHER: 003 JPRS	
¥ 9 ¥ Card 6/6	

XURLES, I.S.: SHALMOVA, P.L.

Studying the behavior of surfaces determined by the Pfaff equation near a point at infinity. Trud; Sam. Gos. un. no.114129-62 \*64.

(MIRA 18:9)



KUKLES, I.S.; SHAKHOVA, L.V.

Limiting cycles of the differential equation

$$\frac{dy}{dx} = \frac{\sum_{\substack{i+j=0\\2\\i+j=0}}^{2} a_{ij}x^{i}y^{j}}{\sum_{\substack{i+j=0\\1\\1}}^{2} a_{ij}x^{i}y^{j}}$$

Izv. AN Uz.SSR. Ser. fiz.-mat. nauk 9 no.5:24-29 '65. (MIRA 18:11)

1. Samarkandskoye otdeleniye Instituta matematiki imeni Romanovakogo AN UZSSR. Submitted December 22, 1964.

ACC NR: AP6016676	SOURCE CODE: UR/O166/6	5/000/005/0024/0029
AUTHOR: Kukles, I. E.	.: Shakhove, L. V.	23 B
ORG   Samarkand Branch	n, Institute of Mathematics im. V. I. Romanov	skiv AN Uzssr
(count wandsvole offele	milye instituta matematiki AN UzSSR)	
TITLE: Limiting cycle	es of the differential equation $dy$ $\sum_{i=1}^{2} b_{ij}$	x/y/
	es of the differential equation $\frac{dy}{dz} = \frac{\sum_{i+j-1}^{2} b_{ij}}{\sum_{i+j-1}^{2} a_{ij}}$	
SOURCE: AN HESSR. To	urant ive Sauta at the	
TOPIC TAGS: different	vestiya. Seriya fiziko-matematicheskikh nauk	, no. 5, 1965, 24-29
	ial equation, mathematics	
ADJIAOI: THE BIN	thors investigate the differential equ	lation
where	$\frac{dy}{dx} = \frac{y_2(x, y)}{X_2(x, y)},$	
	$Y_2(x, y) = b_{00} + b_{10}x + b_{01}y + b_{20}x^2 + b_{11}xy + b_{02}y^2$	
	$G_2(x, y) = a_{00} + a_{10}x + a_{01}y + a_{10}x^2 + a_{11}xy + a_{01}y^3$	
Equation (1) is as	sumed to have four simple singular po	ints, one
or mitou 18 made f	the coordinate origin. Consequently,	
Card 1/2		

L 25918-66

ACC NR: AF6016676

a<sub>00</sub> = b<sub>00</sub> = 0.

An earlier paper by one of the authors (I.S. KUKLES, M. KHASANOVA, Matematika /Mathematics/, 1964, No 6) gave a complete qualitative study of Equation (1); the present note discusses its limiting cycles. According to AN.N. BERLINBKIY (Uchenyye zapiski GGU /Soientific Notes of the Gor'kiy State University/, No 3, XX, 1958), the differential equation (1) can always be presented in the form  $\frac{dy}{dx} = \frac{(a_1x + b_1y)(c_1x + d_1y + e_1)}{(a_2x + e_1)(c_2x + d_2y + e_1)}.$ The case under investigation is the one for which the isocline at infinity is represented by a pair of parallel straight lines.

Orig. art. has: 3 figures, 34 formulas, and 2 tables. [JFRS]

SUB CODE: 12 / SUEM DATE: 22Dec64 / ORIG REF: 003

ь 05195-57 выіса) iJP	(c) <sup>,</sup>		/2002
ACC NR: AP7000750	SOURCE CODE: UR/014	0/66/000/003/00/3/ 2	70083
KUKLES, I. S., and AKCHURI	NA, k. Yu., Samarkand) or Characteristics in a Three-D	B Gimensional Space"	
_	atematika, No. 3 (52), 1966, pp		
ABSTRACT: The article con	siders the three differential e	quations	
$\frac{ds!}{dt} = f_t$	$F_{k}(x, y, z) + F_{1}(x, y, z),$ $F_{k}(x, y, z) + F_{2}(x, y, z),$	(1)	## T- N Company of the Company of th
$\frac{dx}{dt} = \psi_k$	$(x, y, z) + F_3(x, y, z),$		of
degree k; $F_1(x,y,z)$ , $F_2(x,y,z)$	, 7, z), $\psi_k(x, y, z)$ are homoge $(x,y,z)$ , $F_3(x,y,z)$ are functions	definable by the	
conditions	$\frac{F_m}{r^k}$ , $\frac{\partial F_m}{\partial x} \frac{1}{r^k}$ , $\frac{\partial F_m}{\partial y} \frac{1}{r^k}$ $(m = 1, 2, \dots)$	3)	a con land or purpose and a part of the control of
tend to 0, together with	$x = \sqrt{x^2 + y^2 + z^2}$ . In a si	imilar manner as w	as .
Card 1/2		0703 /	737

L-05198-67 ACC NR: A17000750 done on a plane, the authors establish normal regions of the 1st, 2nd, and 3rd kind and in accordance therewith consider the first, second, and third discrimination problems, as well as a fourth discrimination problem which occurs in a space. It is known that all characteristics that have entered a normal region of the 1st kind will enter the origin in the direction of the z-axis. In a normal region of the 2nd kind there is either one or an infinite set of characteristics which enters the origin, and the question of distinguishing these two possibilities constitutes the first discrimination problem. In a normal region of the 3rd kind there is either no characteristic which asymptotically approximates the plane or an infinite set thereof, and herein lies the second discrimination problem. If for a normal region of the 3rd kind an infinite set of characteristics enters the origin, they enter the origin either along a certain surface or by forming a spatial body, and the distinguishing of these two possibilities is the fourth discrimination problem. In the case of the socalled "singular type" of region, characteristics either do or do not enter the origin in all directions, and this the third discrimination problem. The authors note that such problems were considered by L. E. REYZIN', R. M. MINTS, and others, who, however, assumed the asymptotic stability of solutions (an assumption which makes a solution ineffective) or assumed the analyticity of the right-hand sides of equations (1). The authors of the present article make more general assumptions for these problems. Orig. art. has: 25 dormulas. [JPRS: 37,330] TOPIC TAGS: asymptotic solution, polynomial SUS CODE: 12 / SUBTI DATE: 08Jun65 / ORIG REF: 004 / 517.917

#### CZECHOSLOVAKIA

KUKLETA, K: Physiological Institute, Medical Faculty (Fysiologicky Ustav Lekarske Fakulty), Brno.

"The Question of Interhemispheral Transfer of Defense Reflex."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, pp 114-115

Abstract: The author describes experiments with rats, where one of the hemispheres was made inactive by expanding depression. Reproduction of a defense reflex with both hemispheres inactive is described. A case of a defense reflex transmitted not by a transfer of information but by traces of memory formed without the role of the neocortex is discussed. 5 Czech references. Submitted at "16 Days of Phsyiology" at Kosice, 30 Sep 65.

1/1

- 159 -

## APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8

CZECHOSLOVAKIA

KUKLETA, M.: Department of Physiology, Medical Faculty, J.E. Purkyne University, Brno. /Orig. version net given /.

"The Effect of Cortical Spreading Depression on Memory in Rats."

Prague, Activitas Nervosa Superior, Vol 8, No 2, Jun 66, pp 187-188

Abstract: Effect of cortical spreading depression of EFG (CSD) on various types of instrumental reflexes was studied. Application of 25% KCl solution was used to evoke the CSD. CSD obliterated completely conditioned responses in rats. Active avoidance response was partly affected by CSD. Simple avoidance responses were maintained, instrumental responses varied with the character of the response.

ik. Complicated responses were entirely obliterated. If the responses were trained with one hemisphere blocked by CSD, then the bilateral CSD did not affect the temporary connection. No references. Submitted at the 4th Interdisciplinary Conf. of Exp. and Clin. Study of Higher Nerv. Functions at Mar. Lazne, 12-15 Oct 65. Article is in English.

12954-66 ACC NR: AP6005654 CZ/0079/65/007/002/0163/0164 SOURCE CODE: AUTHOR: Kunc, L.; Kukleta, M. ORG: Institute of Industrial Hygiene and Occupational Diseases, Ostrava; Physiological Institute, Medical Faculty, Purkyne University, Bimo TITIE: Functional assymetry in the effect of unilateral spreading depression in rats [This paper was presented at the Third Interdisciplinary Conference on Experimental and Clinical Study of Higher Nervous Functions held in Marianske Lazne From 19 to 23 October 1964.] SOURCE: Activitas nervosa superior, v. 7, no. 2, 1965, 163-164 MOPIC TAGS: rat, brain, behavior pattern Conditioned unilateral reflex to universal depression was studied in 88 rats. Rats with unilateral depression required a longer training for conditioned avoidance reaction than did the control rats. Extinction was more rapid; both right and left hemispheres showed an identical influence. Unilateral depression resulted in a drop of exploratory activity. Exclusion of the right hemisphere was more effective. The most variable components of higher nervous activity in rate are their orienting activity and capacity for orientation: the right hemisphere is the dominant one in this respect. /JPRS/ SUB CODE: 06, 05 / SUBM DATE: none / ORIG REF: 004 Cord 1/1

RUKLETA, Mileslar.

Froof of the subcombinal localization of memory traces in the rat brain. Ser. med. fac. med. Brunensis 38 r...2 19-21. 165

Apropos of functional asymmetry of the re-corobrum. Thid. 25-31

1. Katedra Typiclogie Toksrake fakulty University J.S. Furkyne v Brne (vedodoi - J. AUGr. DrSc. Vladislar Fruta.

KUKLEV, A. M. Cand Agr Soi -- (diss) "Agricultural-engineering indicators of the quality of planting material," and the basic physical properties of tubers as characteristics of the grading of potatoes for planting."

Omsk, 1958. 26 pp (Authors' Abstracts of Dissertations submitted in Omsk Agr Inst im S. M. Kirov), 200 copies (KL, 52-58, 105)

**490-**

K

Country: USSR

Category: Forestry. Forest Management.

Abs Jour: RZhDiol., No 11, 1958, No 48743

Author : Kuklev, G.N.

Inst

Title : Combination Cuttings in the Hardwood-Spruce Tree Stands.

Orig Pub: Lesn. kh-vo, 1957, No 12, 23-26

Abstract: No abstract.

Card : 1/1

SOV/162-58-3-5/26 9(9)

Kuklev, L.P., and Ozerskiy, Yu.P. AUTHORS:

The Probability of Exceeding the Limitation Level by TITLE:

Fluctuation Voltage Within a Given Time Interval (Veroyatnost' prevysheniya fluktuatsionnym napryazhe-

niyem urovnya ogranicheniya v zadannom otrezke vre-

meni)

Nauchnyye doklady vysshey shkoly, Radiotekhnika i elektronika, 1958, Nr 3, pp 33-37 (USSR) PERIODICAL:

The authors derive a general expression for the probability of exceeding the limitation level by fluctua-ABSTRACT:

tion noise which depends upon the distribution of the intervals between the noise peaks within a given

time interval

 $d(t,E_0) = 1 - N(E_0) \left[ \int_0^{\infty} \lambda p(\lambda) d\lambda - t \int_0^{\infty} p(\lambda) d\lambda \right]$ 

whereby d(t,E) is the probability of exceeding the limitation level E; T is the time interval;  $N(E_0)$  is the average number of intervals between peaks

Card 1/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

SOV/162-58-3-5/26

The Probability of Exceeding the Limitation Level by Fluctuation Voltage Within a Given Time Interval

within the time T at the level E. This equation may be used for solving a number of different problems connected with the signal detection in noises, the influence of fluctuation noises on radio equipment, limiters, coincidence circuits, etc. With small a (relative time), or large x (relative limitation level), the probability  $d(a, x_0)$  is expressed in this way

$$d(a,x_0) = (1 + a x_0) \exp\left(-\frac{x_0^2}{2}\right)$$
 (5)

This approximated dependence coinciles with the formula found by L.Z. Klyachkin, which he used erroneously for arbitrary a and x. There are 3 graphs and 1 Soviet reference.

Card 2/3

The Probability of Exceeding the Limitation Level by Fluctuation Voltage Within a Given Time Interval SOV/162-58-3-5/26

ASSOCIATION: Kafedra radiotekhniki Moskovskogo fiziko-tekhniche-skogo instituta (Chair of Radio Engineering of the Moscow Institute of Physical Engineering)

SUBMITTED:

February 19, 1958

Card 3/3

AUTHOR: L.P. Kuklev SOV/109- 4-3-4/38 Influence of the Fluctuation Noise on the Decoding Device TITLE: Operating in Pulse-Spacing-Modulation Systems (Vozdeystviye fluktuatsionnoy pomekhi na dekodiruyushcheye ustroystvo po intervalu mezhdu impul:sami kodovoy gruppy) PERIODICAL: Radiotekhnika i Elektronika, 1959, Vol 4, Nr 3, pp 374-380 (USSR) ABSTRACT: The work investigates the problem of the influence of the fluctuation noise in certain radio navigation systems. The coding adopted in these systems consists of sending a group of n identical pulses (of the same shape and duration) but of variable spacing between the pulses. The decoding of such signals is done by means of a delay line and coincidence circuits, which compare the coding spacings in the signal with the durations of the delays in the line; the latter is adjusted for the reception of a pre-determined code. For the purpose of analysis, it is assumed that the intermediate-frequency amplifier of the receiver is followed by a linear amplitude detector and an amplitude limiter; the pulse signal is detected if the Card 1/5 Voltage, quring the appearance of limit level. For estimating the effect of noise a voltage, during the appearance of the signal, exceeds a

SOV/109-4-3-4/38

Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

probability  $P_R$  is introduced, which is defined as the probability of obtaining at least one noise-actuated output signal during the search pulse of the receiver. The search pulse has a duration g which is considerably longer than that of the signal pulses. If the average number of noise-actuated pulses at the output of the decoder per unit time is R, the probability  $P_R$  is given by:

If the duration of the coding intervals is much longer than the correlation time between the peaks of the perturbing noise, and the signal is absent, the average time during which the noise is present at the output of the decoder can be expressed as:

$$\mathcal{E} = \left[ \int_{E_0}^{\infty} W(E) dE \right]^n = \exp\left(-n \frac{x^2_0}{2}\right). \tag{2}$$

Card 2/5 Eq (2) represents the number of segments at which the noise

SOV/109---4-3-4/38

Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

exceeds the limiting level. The average number of false output signals,  $R_n$ , is expressed by Eq (3) where  $\vartheta_n$  is the mean statistical duration of the noise peaks at the output of the decoder. The final formula for  $R_n$  is in the form of Eq (6) while the noise probability is given by:

 $P_{\pi} = gR_{n} = \frac{g\delta\omega}{\sqrt{2\pi}} nx_{o} \exp\left(-n\frac{x_{o}^{2}}{2}\right)$  (7)

δω in Eq (7) denotes the average noise spectral width at the output of the detector. Eq (7) was checked experimentally for n=1,2,3,4 and 5. The results are shown in Fig (1); the solid curves are calculated on the basis of Eq (7), while the circles denote the experimental points. When both the signal and noise are present, the probability of the transfer of an n-pulse code group through the limiter,  $p_n$ , can be expressed by Eq (14); the following notation is adopted in the equation: x is the amplitude of the envelope of the signal,  $x_c = E_c/u_R$  is the ratio of the amplitude of

Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

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the signal to the noise;  $H = nx_0^2/2$ , for the case when the bandwidth of the intermediate-Eq (14) is valid frequency amplifier is an optimum, that is  $\Delta f = 1/\tau$ where  $\Upsilon$  is the duration of a pulse. If  $\Delta f \Upsilon = k$ , the probability  $p_n$  is expressed by Eq (15) where  $H_0 = Hk$ . The resulting formulae are used to plot the graphs of  $p_1$ for various values of k; these are shown in Fig (2). From the above analysis it is found that the spaceduration pulse coding of signals provides an efficient method of protecting the signals from noise. the loss in the signal-to-noise ratio at the output of the receiver increases with the number of pulses in a code It is therefore necessary to employ the codes small number of pulses. It is also found that having a small number of pulses. if the bandwidth of the receiver is increased above the optimum value, an additional loss in the signal-to-noise Card 4/5 ratio occurs. The author expresses his gratitude to Professor Ye.I. Manayev for reading the manuscript and

Influence of the Fluctuation Noise on the Decoding Device Operating in Pulse-Spacing-Modulation Systems

for valuable remarks. There are 2 figures and 7 references, 6 of which are Soviet and 1 English; one of the Soviet references is translated from English.

SUBMITTED: October 12, 1957

Card 5/5

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S/109/60/005/06/002/021 **E**140/E163

AUTHORS:

Kuklev, L.P., and Ozerskiy, Yu.P.

TITLE:

Comparison of Two Decoding Methods for Interval Codes

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 6,

pp 894-901 (USSE)

ABSTRACT: In interval coding an elementary signal group consists of several pulses of common duration and shape, distant from each other by preassigned time intervals. delay line with n taps is used to decode a group of n pulses. Two methods of processing the signals from the taps exist: a coincidence method and a summation method. For technical reasons the coincidence method is preferred. The purpose of the article is to compare the noise stabilities of the two methods for the cases of regular and fluctuating signals in the presence of From the analysis it follows that the summation method almost always gives an appreciable loss of noise stability in comparison with the coincidence method.
Only at relatively low signal/noise ratios is a certain advantage of the summation method observed. because for small signals the amplitude-limiting level

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8/109/60/005/06/002/021

B140/B163 Comparison of Two Decoding Methods for Interval Godes

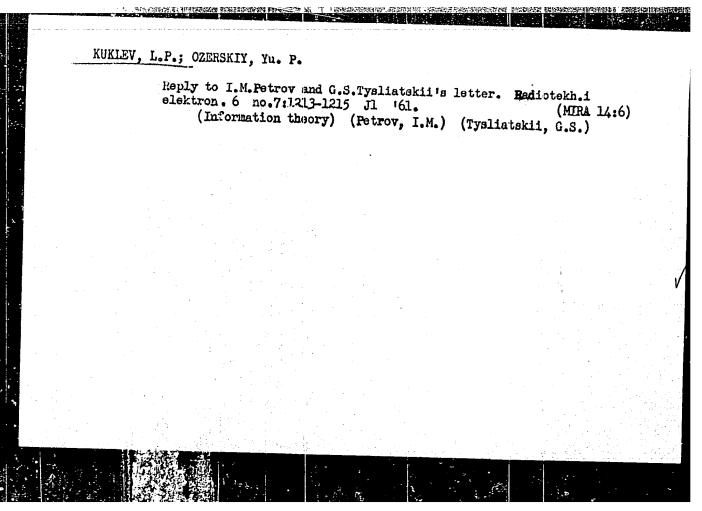
of the summation method is close to optimal. Card There are 4 figures and 3 Soviet references. 2/2

ASSOCIATION: Mafedra radiotekhniki, Moskovskogo fiziko-

tekhnicheskogo instituta

(Radio Engineering Faculty, Moscow Physico-Technical Institute)

SUBMITTED: November 26, 1959



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

KUKLELLS

AUGMER'S

Kuklev, L.S., Engineer

135-9-18/24

TITE:

Rivet Head Welding in the Minufacture of Electric Instruments (Privarka zaklepochnykh golovok pri izgotovlenii elektroapparatury)

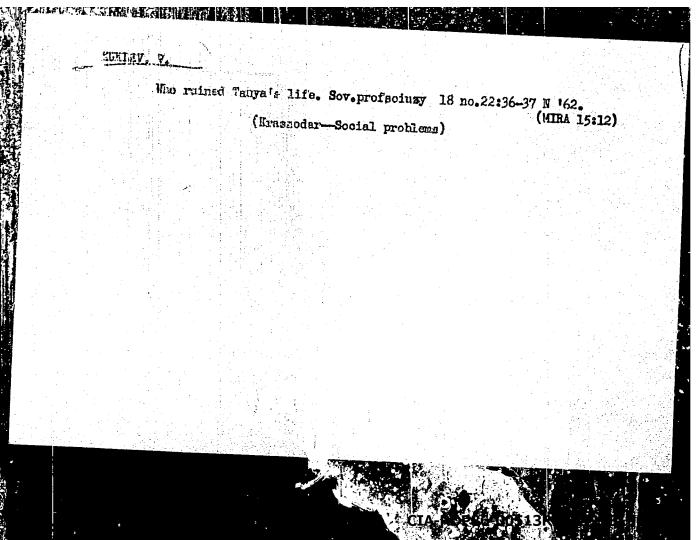
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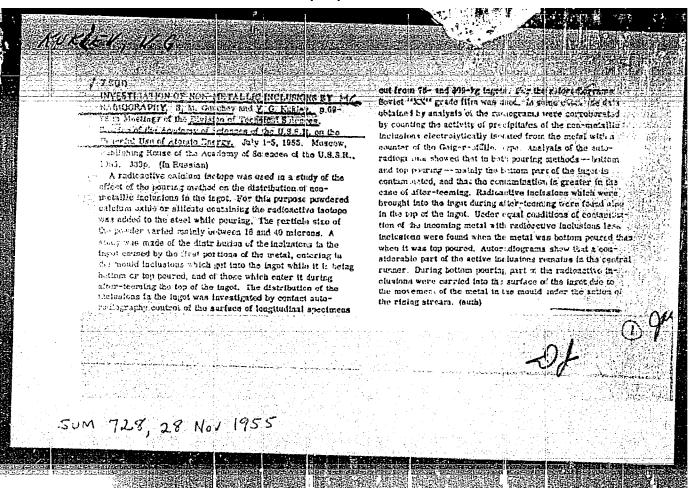
"Svarochnoye Proizvodstvo", 1957, # 9, p 35 (USSR)

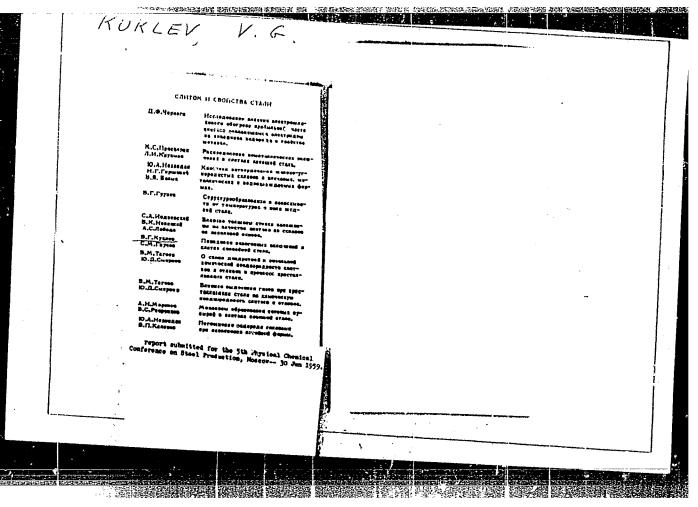
ABSTRACE

The novelty of the method concerned consists in the way of punching the thin-sheet parts to be joined by rivets - by a nail-like punch which produces a torn, spiky rim around the punched hole. The existing method of spot welding steel rivets and stude to stamped thin-sheet instrument parts has the following disadvantages: the joint is weak due to the small fusion area between the rivet head and the part, frequently non-fusion occurs and the rivet has a non-perpendicular position in the hole. The new method of punching climinates the aforementioned disadvantages by providing a licenser guide for the rivet and a welded joint of a higher strongth than that of the stamped part of the base metal. The method is being employed at the author's plant since December 1956. The article contains 2 sketches.

AVAILABLE: Card 1/1 Library of Congress







VOINOV, S.G.; EALHERIKOV, Yo.J.; TOPIL'SKIY, P.V.; BOBKOVA, O.S.;

VUELUT V.C.; EATTO, V.P.; KOSOY, L.F.; SHALIMOV, A.G.;

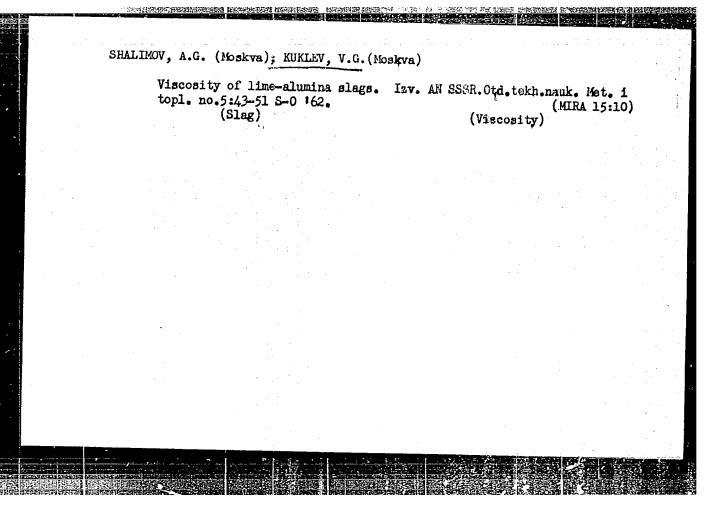
Prinimall monastive: NOTE; V.N.; CHARGERIC, N.I.;

Developing a procedura for the making of limestone and alumina semifinished products for the preparation of synthetic slag.

Stal' 22 no.2:128-132 F '62.

(Slag)

(Electric furnaces)



# SHALIMOV, A. G.; KUKLEV, V. G. Application of the SVI-57 viscosimeter for high temperature measurements. Zav. lab. 28 no.12:1526-1527 '62. (MIRA 16:1) 1. TSentral'nyy nauchno-issledovatel'shty institut chernoy metallurgii im. I. F. Bardina. (Viscosimeter)

ACCESSION NR: AP4040978

8/0147/64/000/002/0126/0133

AUTHOR: Kuklev, Ye. A.

TITLE: Approximate calculation of flight speed in a nonvertical diverand determination of the loss in altitude and range according to the autopilot program of an unmanned aircraft with a turbojet engine

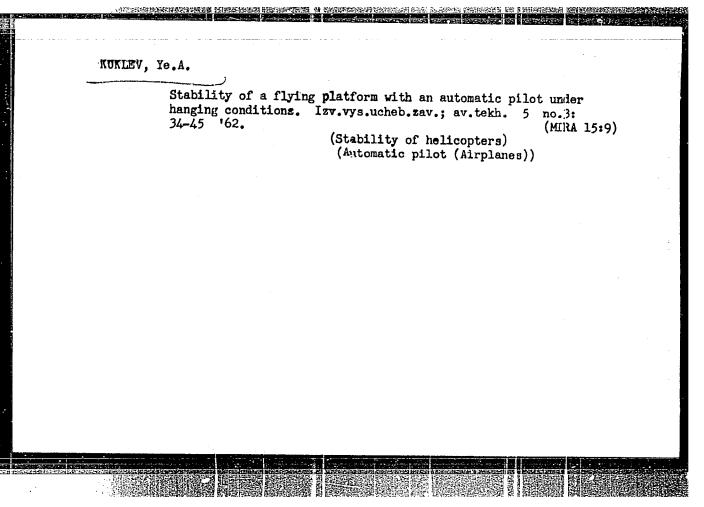
SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 2, 1964, 126-133

TOPIC TAGS: dive flight speed, aircraft maneuver, autopilet program, unmanned aircraft, flight program

ABSTRACT: An approximate method is outlined for calculating the speed of a powerful turbojet aircraft in a nonvertical dive. The Ostoslavskiy formula is used, and engine thrust is taken into account as a constant. The results of calculations by this method for altitude drops less than 10 km almost coincide with the results of numerical integration. Expressions are derived for determination of the loss in altitude and range of an unmanned aircraft on entry into a dive, according to one of two proposed autopilot programs. Recommendations concerning the choice of program under conditions of

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ACC NRI AP6036850

SOURCE CODE: UR/0147/66/000/004/0020/0022

CHARLEST THE PRODUCT STREET

AUTHOR: Kuklev. Ye. A.

ORG: none

TITIE: Statistical linearization of the nonlinear aerodynamic moment coefficient of the aircraft with respect to the angle of attack

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1966, 20-22

TOPIC TAGS: linear approximation, aircraft autopilot, aircraft guidance, aerodynamic stability, automatic control, and dynamic mornet, and of affacts

ABSTRACT: The statistical linearization of the nonlinear aerodynamic coefficient of the moment of an aircraft with respect to the angle of attack consists of replacing it by a linear coefficient which is equivalent in a probabilistic sense. The latter contains the statistical characteristic of nonlinearity and the coefficient of the moment increase with respect to the random component of the fluctuation of the angle of attack. The present paper gives the results of calculating the equivalent characteristics of the aerodynamic nonlinearity which are determined from wind tunnel tests and are approximated by two parabolas of the second order. The obtained equivalent coefficients of the moment increase can be used in the statistical

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UIX: 533.6.013.15

APPROVED FOR RELEASE: 08/23/2000

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linearization of nonlinear equations for the aircraft motion under random disturbances due to atmospheric turbulence or errors in the control system. ()rig. art. has:  [06]										
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KUKLEV, Ye.A.

Approximate calculation of the flight speed at inclined diving and the determination of the loss of altitude and range in the zone of the entrance into diving according to the program for a pilotless airplane with a turbojet engine. Izv.vys.ucheb.zav.;av.tekh. 7 no.2:126-133 164.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8"

1 41136-65 EE(-0/ENT(d)/EEC-4 Pn-4/Po-4/Po-4/Po-4/Po-4/P1-4 BC ACCESSION NR: AP4648502 5/0147/64/000/004/0011/0019 AUTHON; Kukley, YB; TITLE: One method of computing, by means of an analog, the pitch angle dispersion of an SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1964, 11-19 " TAGS: atmospheric turbulence, autopilot, arresult pitch ancie, pitch ingle dispersion, wind velocity, aircraft motion simulation TRACT: A method is outlined which, who end not coming to the first makes use the processing order to estimate projections of the contract of t the state of the deposit right and the second subjects a traction for the conserva-The Arrange State of the state The second secon de la la colonia de la colonia the short-periodic resting is that in horizontal flight the short-periodic rection of the aircraft Card 1/3

THE PROPERTY OF THE SECOND PROPERTY OF THE PRO

ACCESSION NR: AP4048502 in terms of pitch is set up only by the vertical component of wind velocity  $\mathbf{u}_{\mathbf{g}}(t)$ , which is small in comparison with the air speed of the aircraft V due to the occurrence of a distribution in the angle of attack  $\mathbf{1} \leq (t) \approx (t) \times (t)$  and the speed of the aircraft V due to the occurrence of a distribution in the lifting force disregarded. A little to some the second of the aircraft V and the lifting force disregarded. the employment ug that a random st. then it has been the second consequences · distribution, has zero mathematical expectancy, is subject to the theorem of ergodicity, and may be characterized by the single-dimensional spectral density S (a) -ω 21 AV is the circular frequency forcer on a divine a constant of the the country plane in time, and less the spatial trees, and the residue in the country the state of the second war agreement atmosphere es it pessible to select with great effectiveness the transmission numbers for the outo-A life will among the maximum dynamic and a superior of the maximum of the maximum of the maximum dynamic and the maximum of t The transmission numbers can be easily varied on the analog by changing the gain factors set on the variable resistances which are The method also permits an estimation, according to the magnitude of the dispersion, of the effectiveness obtained in the use of the automatic pilot with the aircraft 2/3

### "APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310010-8 TO THE WAR WAS AND AND AND A STATE OF THE S

I. 41136-65 ACCESSION NR: AP4048502

subject to atmospheric turbulence. The simulation block-diagram also, it is claimed, provides the capability of computing the dispersion of the solution according to other variables as well, including the flight altitude, by adding one more kinematic ratio to the initial equation system. Orig. art. has: 3 figures and 17 formulae.

ASSOCIATION: None

SUBMITTED: 20Jan64

ENCL: 00

SUB CODE: AC, DP

NO REF SOV: 008

OTHER: 006

3/3

EEC(b)-2/EMA(h)/EMT(1) Pi-4/Pj-4/Pm-4/Pt-4/Pac-4/Peb AP5019014 UF/0285/65/000/012/0038/0039 621.385.632 AUTHOR: Kuklev, Yu. I.; Pchel'nikov, Yu. N. Traveling wave tube. Class 21, No. 171928 TITLE: SOURCE: Byulleten' izobretemiy i tovarnykh znakov, no. 12, 1965, 38-39 TOPIC TAGS: traveling wave tube, helical delay system ABSTRACT: The proposed medium- or high-power traveling-wave tube (Fig. 1 of Erclosure) contains a helical delay system and an attenuator insert. The insert is in the form of a cavity absorber between the helix and the metal envelope. To imrecycline efficiency of the TWT and facilitate heat transfer from the absorber, the condition a projection close to the absorber with an inner dismeter smaller than is diameter of the rest of the TWT envelops. Orig. art. has: I figure. AUSCCIATION: none SUBMITTED: 15May64 ENCL: 01 SUB CODE: EC HO REF SOV: 000, OTHER: 000 ATD PRESS: 4)59 Card 1/2